HABITAT RESTORATION/ENHANCEMENT FORT HALL BOTTOMS 9201000

SHORT DESCRIPTION:
Provide conditions to maintain a self- perpetuating tribal subsistence and trophy trout fishery. Provide conditions and seed stock to re-establish native cutthroat trout runs in bottoms and mountain stream tributaries.

SPONSOR/CONTRACTOR: SBT
Shoshone-Bannock Tribes
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SUB-CONTRACTORS:
N/A

GOALS

GENERAL:
Supports a healthy Columbia basin, Maintains biological diversity, Maintains genetic integrity, Increases run sizes or populations, Provides needed habitat protection

RESIDENT FISH:
Habitat

NPPC PROGRAM MEASURE:
10.3E.10, 10.3E.11

RELATION TO MEASURE:
Project is an ongoing implementation of the above program measures.

TARGET STOCK	LIFE STAGE	MGMT CODE (see below)
Rainbow trout		
Cutthroat trout		W

AFFECTED STOCK	BENEFIT OR DETRIMENT
Ospry	Beneficial
Trumpeter swan	Beneficial
Otter	Beneficial
Bald eagle	Beneficial
Common carp	Beneficial

BACKGROUND

STREAM AREA AFFECTED
Stream name:
Spring Creek and Clear Creek
Stream miles affected:
>70
Hydro project mitigated:
Palisades;Minidoka

LAND AREA INFORMATION
Subbasin:
Upper Snake River
Land ownership:
Indian Reservation and Private
Acres affected:
~30,000
Habitat types:
Spawning gravel, juvenile cover, adult cover, riparian

HISTORY:
The project was initiated in 1992 combining riparian plantings and instream structures - designed to reduce bank erosion and aggr

ade instream fine sediment - with riparian fencing. Due to the importance of the habitat and its large scale (a watershed of spring creeks), research and project evaluation have been integral. This basic resident fish project at Fort Hall has and continues to meet biological objectives and is catalyst for fish and wildlife equitable grazing and forestry management plans. Also Salmon Corps fencing crews are cost-sharing and roughly doubling field work. Tribal members and permit anglers are noticing the increased densities and average sizes of trout. Natural production reached high enough levels to eliminate stocking of hatchery fish in 1994. However, American Falls Reservoir and the main stem Snake River continue to be rapidly flooded and drafted each year. This directly and indirectly causes large-scale streambank erosion on bottoms spring streams; severely reducing substrate and water quality and populations of stream-dwelling invertebrates. Continued effort along with stable funding will continue to slow adverse impacts, increase native trout populations, and provide a growing source of income and subsistence.

BIOLOGICAL RESULTS ACHIEVED:
Trout populations are now 5 times denser and 5 times greater in biomass than pre-project populations. Fry densities in treatment areas of Spring Creek were 6 times greater than in control areas. The index of invertebrate diversity (Shannon-Weaver) was higher in control versus treatment areas in 1995 and higher overall in 1995 than in 1993.

PROJECT REPORTS AND PAPERS:
Monthly and annual reports of activities for 1992, 1993, and 1995 1996 are available in the project file. Monthly reports are available for 1994.

ADAPTIVE MANAGEMENT IMPLICATIONS:
Project methodologies and monitoring techniques have changed in response to information learned from past projects. Survey and monitoring techniques have been adapted to the unique nature of bottoms streams. Channel morphology and silt levels are measured using Silt and Depth Measurements (S.A.D.M.). Instream structures, bank slopings, and willow plantings are used in areas known from past studies to be most succesful.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:
1) Provide subsistence fishing opportunities for tribal members where densities approach 200 trout/ha with a biomass of 220 kg/ha in the electrofishing sample. 2) Re-establish native cutthroat runs in 14 bottoms and mountain tributaries.

CRITICAL UNCERTAINTIES:
Funding

BIOLOGICAL NEED:
Hybridization and competition with exotic species has critically reduced native cutthroat trout stocks (2% of trout in electrofishing sample appeared to be pure cutthroats). Trout population levels are about half that reported for similar sized spring creeks in Idaho.

HYPOTHESIS TO BE TESTED:
Trophy native cutthroat trout fisheries can coexist with subsistence fishing when efforts are made to prevent hybridization and maintain quality habitat.

ALTERNATIVE APPROACHES:
N/A

JUSTIFICATION FOR PLANNING:
N/A

METHODS:
Instream habitat improvement in the form of revetments, wattles, rock wing dams and barbs, and root wads. Riparian area land m

anagement changes including fencing for livestock exclusion and grazing plans which reduce livestock impacts to riparian areas and streams. Use of streamside incubators to re-introduce native stocks to areas habitat restoration efforts have improved spawning and rearing areas and where non-native rainbow and hybrid trout have not, or are prevented, from becoming established.

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase **Start** 1992 **End** 2007 **Subcontractor**

Task Locate genetically pure populations of Yellowstone cutthroat trout on reservation streams and/or streams on nearby ceded lands. Identify three tributary streams where stream-side incubators may be used to re-establish cutthroat trout. Assess spawning on the identified streams to determine if rainbows or hybrids are currently using the area. Monitor and assess impacts of American Falls and Snake River operations. Measure physical and biological parameters on bottoms streams.

Implementation Phase **Start** 1992 **End** 2007 **Subcontractor**

Task Conduct habitat improvement on the identified tributaries to create or improve spawning and rearing areas for trout. Continue to protect and restore riparian habitats and stream channels on bottoms streams.

O&M Phase **Start** 1992 **End** 2007 **Subcontractor**

Task Evaluate differences between habitat treatment and control areas.

PROJECT COMPLETION DATE:
2007

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

Expected performance of target population or quality change in land area affected:
Increase the useable spawning area available to trout. Increase the proportion of cutthroat trout in the stream (represented in the electrofishing catch). Maximize trophy fishery for tribal subsistence and economic development. Increase habitats considered to be limiting trout production and survival.

Present utilization and convservation potential of target population or area:
The Fort Hall bottoms area is unique in terms of its aquatic environment and terrestrial land forms and biota. In addition, the bottoms spring creeks provide a trophy trout fishery that benefits tribal subsistence and economic development.

Assumed historic status of utilization and conservation potential:
Historically the bottoms unique ecosystem extended to the 27,000 acres flooded by American Falls reservoir. Native fish populations (i.e. cutthroat trout) once flourished in bottoms and mountain streams.

Long term expected utilization and conservation potential for target population or habitat:
Restoration of fluvial salmonid habitat degraded by anthropogenic activities to the benefit of native fishes and other riparian and instream biota.

Contribution toward long-term goal:
Restoration/enhancement of habitat for the benefit of native Yellowstone cutthroat and wild rainbow trout.

Indirect biological or environmental changes:
Improvements in water quality and aquatic biota will benefit terrestrial wildlife; including, trumpeter swans, bald eagles, otters, and ospry.

Physical products:
1992 built 2 km of jack and rail fence along Clear Creek to control buffalo access in 1992. Planted 4,000 willow shoots. Conducted stream habitat surveys. 1993 built log and rock wing-dams, added woody debris, root wads, and boulder clusters to induce diversity. Planted 6,000 willow shoots. Sampling revealed trout populations 15 times denser and 100 times greater in biomass than pre-project propulations. Did bank stabilization and fencing on Spring Creek near its headwaters. 1994 constructed 6.4 km of fence along Clear Creek. Council took action against buffalo trespass. Continued sampling studies, plantings, and instream efforts. 1995 built 7.2 km of riparian fencing, planted 11,618 willow pole cuttings and 323 cattails, anchored 371 m of evergreen revetments, built numerous wing dams and barbs, sloped 436 m of eroding bank. 1996 built 1.2 km of riparian fencing, planted 1845 willow pole cuttings, anchored 660 m for evergreen revetments.

Environmental attributes affected by the project:
Enhancement projects provide juvenile and adult cover, increased flow, aggrade sediment, create/clean spawning gravel.

Changes assumed or expected for affected environmental attributes:
Continued narrowing and deepening of stream channels. Increases in numbers of salmonids. Healthy productive lotic environments.

Measure of attribute changes:
N/A

Assessment of effects on project outcomes of critical uncertainty:
N/A

Information products:
The project produces four quarterly reports and an annual report every year.

Coordination outcomes:
(See physical products)

MONITORING APPROACH
Instream habitat improvement in the form of revetments, wattles, rock wing dams and barbs, and root wads. Riparian area land management changes including fencing for livestock exclusion and grazing plans which reduce livestock impacts to riparian areas and streams. Use of streamside incubators to re-introduce native stocks to areas habitat restoration efforts have improved spawning and rearing areas and where non-native rainbow and hybrid trout have not, or are prevented, from becoming established.

Provisions to monitor population status or habitat quality:
Monitoring of fish populations using snorkeling and electrofishing techniques. Measurement of habitat parameters using Silt and Depth Measurements (S.A.D.M.) Collection of invertebrate data to identify ecosystem health.

Data analysis and evaluation:
Quantitative data will be analyzed using appropriate statistical tests of significance. Qualitative data will be evaluated and analyzed using current information on management of lotic ecosystems.

Information feed back to management decisions:
Information gathered from past projects is used to modify implementation of future enhancement/restoration efforts.

Critical uncertainties affecting project's outcomes:
N/A

EVALUATION

Increases in fish production, decreases in silt, increases in diversity of invertebrate assembleges, increases in numbers of native fishes, increases in complex fish cover, and increases in size and health of fishes.

Incorporating new information regarding uncertainties:
All project decisions will be made with the use of qualitative and quantitative data. Restoration/enhancement is an iterative process that requires evaluation of past projects and application to new projects to produce the greatest benefit to fishery resources.

Increasing public awareness of F&W activities:
Spring Creek is a trophy trout fishery and is well known to the community of southeast Idaho and to fisherman throughout the country. Efforts to protect and monitor the Blackfoot River have begun with the formation of the Blackfoot Watershed Council. Support from the community and concerns for streams in southeast Idaho was and is the impetus for stream restoration/enhancement of bottoms streams and mountain feeder streams such as the Blackfoot.

RELATIONSHIPS

RELATED BPA PROJECT	RELATIONSHIP
10.8C.7	Funding
10.8C.6	Joint culture facility SPT/SBT - Production of native trout species
10.3E.11	Funding
10.3E.9	Joint culture facility SPT/SBT - Production of native trout species

RELATED NON-BPA PROJECT	RELATIONSHIP
Blackfoot River Watershed Monitoring/Multiple	Improved water quality in Blackfoot River
Wetland Reclamation/Ducks Unlimited	Improved water quality in bottoms streams
Salmon Corps./Americorps.	Cost sharing

OPPORTUNITIES FOR COOPERATION:
Opportunity for continued cost sharing with Salmon Corps. Coordinate with Idaho Fish and Game to determine harvest and fish planting management surrounding the Reservation.

COSTS AND FTE

1997 Planned: $119,500

FUTURE FUNDING NEEDS:

FY	$ NEED	% PLAN	% IMPLEMENT	% O AND M
1998	$130,000	0%	40%	60%
1999	$130,000	0%	40%	60%
2000	$130,000	0%	40%	60%
2001	$135,000	0%	40%	60%
2002	$140,000	0%	40%	60%

PAST OBLIGATIONS (incl. 1997 if done):

FY	OBLIGATED
1992	$50,601
1993	$210,645
1994	$25,200
1995	$99,998
1996	$124,182
TOTAL:	$510,626

Note: Data are past obligations, or amounts committed by year, not amounts billed. Does not include data for related projects.

OTHER NON-FINANCIAL SUPPORTERS:
Salmon Corps. Provide help with field work.

LONGER TERM COSTS: ~100,000.00

20% Implementation; 80% Maintenance.

1997 OVERHEAD PERCENT: 26%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:
Personnel and fringe costs only.

CONTRACTOR FTE: 3 FTE